DEPARTMENT OF ENVIRONMENTAL CONSERVATION

AIR QUALITY OPERATING PERMIT

Permit No. 227TVP01 Issue Date: June 30, 2003
Application No. 000227 Expiration Date: July 29, 2008

The Department of Environmental Conservation, under the authority of AS 46.14 and 18 AAC 50, issues an operating permit to the Permittee, **TDX North Slope Generating, Inc.**, for the operation of the **Deadhorse Power Plant**.

This permit satisfies the obligation of the owner and operator to obtain an operating permit as set out in AS 46.14.130(b).

As set out in AS 46.14.120(c), the Permittee shall comply with the terms and conditions of this operating permit.

All facility-specific terms and conditions of Air Quality Control Construction Permit No 227CP01 have been incorporated into this Operating Permit.

This Operating Permit becomes effective July 30, 2003.

John F. Kuterbach, Manager

Air Permits Program

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List of Abbreviations Used in this Permit

AAC .....Alaska Administrative Code
ADEC.....Alaska Department of Environmental Conservation
AS.....Alaska Statutes
ASTM.....American Society for Testing and Materials
BACT.....Best Available Control Technology
C.F.R. .....Code of Federal Regulations
CO.....Carbon Monoxide
dscf.....Dry standard cubic foot
EPA.....US Environmental Protection Agency
gr./dscf.....grain per dry standard cubic foot (1 pound = 7000 grains)
GPH.....gallons per hour
HAPs or HACs.....Hazardous Air Pollutants or Hazardous Air Contaminants [*HAPs* or *HACs* as defined in AS 46.14.990(14)]
ID.....Source Identification Number
kPa.....kiloPascals
LAER .....Lowest Achievable Emission Rate
MACT .....Maximum Achievable Control Technology as defined in 40 C.F.R. 63.
MR&R.....Monitoring, Recordkeeping, and Reporting
NESHAPs.....Federal National Emission Standards for Hazardous Air Pollutants [*NESHAPS* as contained in 40 C.F.R. 61 and 63]
NO_X.....Nitrogen Oxides
NSPS.....Federal New Source Performance Standards [*NSPS* as contained in 40 C.F.R. 60]
O & M .....Operation and Maintenance
O_2 .....Oxygen
PM-10 .....Particulate Matter less than or equal to a nominal ten microns in diameter
ppm .....Parts per million
ppmv, ppmvd.....Parts per million by volume on a dry basis
psia .....Pounds per Square Inch (absolute)
PSD .....Prevention of Significant Deterioration
PTE.....Potential to Emit
SIC. .....Standard Industrial Classification
SO_2.....Sulfur dioxide
TPH.....Tons per hour
TPY .....Tons per year
VOC.....volatile organic compound [*VOC* as defined in 18 AAC 50.990(103)]
VOL.....volatile organic liquid [*VOL* as defined in 40 C.F.R. 60.111b, Subpart Kb]
vol% .....volume percent
wt%.....weight percent

Section 1. Identification

Names and Addresses

Permittee:	TDX North Slope Generating, Inc. Deadhorse Power Plant Deadhorse, Alaska
Facility:	**Deadhorse Power Plant**
Location:	Latitude 70° 11' 40.9" N / 148° 27' 54" W Longitude
Physical Address:	Tract 72, ASL No. 76-227 Deadhorse, AK
Owner:	TDX-North Slope Generating, Inc. Two West Market Street, 4th Floor West Chester, PA 19382 (TDX – North Slope Generating, Inc. is wholly owned by TDX Power, Inc.)
Operator:	TDX-North Slope Generating, Inc. Two West Market Street, 4th Floor West Chester, PA 19382
Permittee's Responsible Official:	Mr. Bruce Levy, President TDX Power, Inc. Two West Market Street, Suite 400 West Chester, PA 19382 610-918-8581 (voice) 610-918-8583 (fax)
Designated Agent:	None
Facility and Building Contact:	To be determined
Fee Contact:	Mr. Bruce Levy, President TDX Power, Inc. Two West Market Street, Suite 400 West Chester, PA 19382
Facility Process Description	Electric Services. Engaged in the generation, transmission, and/or distribution of electric energy for sale.
SIC Code of the Facility:	4911

[18 AAC 50.350(b)(1), 1/18/97]

Section 2. General Emission Information

[18 AAC 50.350(b)(1), 1/18/97]

Emissions of Regulated Air Contaminants, as provided in the Permittee's application:

Oxides of Nitrogen (NO_X), Carbon Monoxide (CO), Particulate Matter (PM-10), Sulfur Dioxide (SO_2), and Volatile Organic Compounds (VOC)

Facility Classifications:

(1) 18 AAC 50.325(b)(1)

(2) The facility would be classified as a PSD major as defined in 18 AAC 50.300 (c)(1) if it were not for the owner's requested limits allowed under 18 AAC 50.305(a)(4).

Section 3. Source Inventory and Description

[18 AAC 50.350(d)(2), 1/18/97]

Sources listed in Table 1 have specific monitoring, record keeping, or reporting conditions in this permit. Source descriptions and ratings are given for identification purposes only.

Table 1 - Source Inventory

Source ID	Source Name	Source Description	Fuel Type	Rating / Size	Date Installed
1	Diesel Back Up Generator #1	CAT D 3512	Diesel	1,206 Hp [887 kW] @1,200 RPM	1989
2	Gas Peaking Generator #2	CAT G 3516	Gas	1,152 Hp [850 kW] @ 1,200 RPM	1992
3	Gas Peaking Generator #3	CAT G 3516	Gas	1,152 Hp [850 kW] @ 1,200 RPM	1989
4	Diesel Back Up Generator #4	CAT D 3512	Diesel	1,206 Hp [887 kW] @1,200 RPM	1989
5	Diesel Back Up Generator #6	EMD V20-645E	Diesel	3,600Hp [2,647 kW] @ 900 RPM	1982
6A	Diesel Main Generator #11*****	CAT D 3616	Diesel	6,196Hp [4,559 kW] @ 900 RPM	1991
6	Gas Main Generator #11	CAT G 3616	Gas	4,811Hp [3,538 kW] @ 900 RPM	Future
7	Diesel Back UP Generator # 12	CAT D 343	Diesel	406 Hp [299 kW] @ 1,800 RPM	1970
8	Above Ground Fuel storage Tank #13		Diesel	20,000 gallons	1992

* The existing CAT D 3616 Diesel engine, Source ID 6A will be replaced by a new CAT G 3616 Gas engine Source ID 6.

Section 4. Emission Fees

1. Assessable Emissions. The Permittee shall pay to the Department an annual emission fee based on the facility's assessable emissions as determined by the Department under 18 AAC 50.410. The assessable emission fee rate is set out in 18 AAC 50.410(b). The Department will assess fees per ton of each air contaminants that the facility emits or has the potential to emit in quantities greater than 10 tons per year. The quantity for which fees will be assessed is the lesser of

1.1 the facility's assessable potential to emit of 503 TPY; or

1.2 the facility's projected annual rate of emissions that will occur from July 1 to the following June 30, based upon actual annual emissions emitted during the most recent calendar year or another 12 month period approved in writing by the Department, when demonstrated by

a. an enforceable test method described in 18 AAC 50.220;

b. material balance calculations;

c. emission factors from EPA's publication AP-42, Vol. I, adopted by reference in 18 AAC 50.035; or

d. other methods and calculations approved by the Department**.**

[18 AAC 50.346(a)(1), 5/3/02 and 18 AAC 50.350(c) & 50.400 – 50.420, 1/18/97]

2. Assessable Emission Estimates. Emission fees will be assessed as follows:

2.1 no later than March 31 of each year, the Permittee may submit an estimate of the facility's assessable emissions to ADEC, Air Permits Program, ATTN: Assessable Emissions Estimate, 410 Willoughby Ave., Juneau, AK 99801-1795**;** the submittal must include all of the assumptions and calculations used to estimate the assessable emissions in sufficient detail so the Department can verify the estimates; or

2.2 If no estimate is received on or before March 31 of each year, emission fees for the next fiscal year will be based on the potential to emit set forth in condition 1.1.

[18 AAC 50.346(a)(1), 5/3/02 and 18 AAC 50.350(c) & 50.400 – 50.420, 1/18/97]

Section 5. Source-Specific Requirements

Fuel-Burning Equipment

3. Visible Emissions. The Permittee shall not cause or allow visible emissions, excluding condensed water vapor, emitted from Source ID(s) 1 through 7 listed in Table 1 to reduce visibility through the exhaust effluent by any of the following:

a. more than 20 percent for a total of more than three minutes in any one hour[1];

[18 AAC 50.055(a)(1), 1/18/97 and 18 AAC 50.350(d)(1)(C), 6/21/98]
[40 C.F.R. 52.70, 7/01/01]

b. more than 20 percent averaged over any six consecutive minutes[2].

[18 AAC 50.055(a)(1) & 50.346(c), 5/3/02 and 18 AAC 50.350(d)(1)(C), 6/21/98]

3.1 For Source ID(s) 1, 4, 5, 6A, and 7, monitor, record and report in accordance with Section 6. Conduct an initial Method 9 visible emission reading of Sources 2 and 3 for no less than 18 minutes duration each within 90 days after construction permit 227CP01issue date. Conduct an initial Method 9 visible reading of Source 6 of no less than 18 minutes duration within 30 days after initial startup.

3.2 For Source ID(s) 2, 3 and 6, burn only gas as fuel. Monitoring for these sources shall consist of a certification in each operating report under condition 56 that each of these sources fired only gas. Report under condition 54 if any fuel is burned other than gas.

[AQC permit 227CP01, 3/11/03, and 18 AAC 50.350(g) - (i) & 50.346(c), 5/3/02]

4. Particulate Matter. The Permittee shall not cause or allow particulate matter emitted from Source ID(s) 1 through 7 listed in Table 1 to exceed 0.05 grains per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.

[18 AAC 50.346(c), 5/3/02; 18 AAC 50.055(b)(1), 1/18/97and 18 AAC 50.350(d)(1)(C), 6/21/98]

4.1 For Source ID(s) 1, 4, 5, 6A, and 7, monitor, record and report in accordance with Section 6.

4.2 For Source ID(s) 2, 3 and 6, burn only gas as fuel. Monitoring for these sources shall consist of a certification in each operating report under condition 56 that each of these sources fired only gas. Report under condition 54 if any fuel is burned other than gas.

[18 AAC 50.346(c) & 50.350(g) – (i), 5/3/02]

[1] For purposes of this permit, the "more than three minutes in any one hour" criterion in this condition and condition 22.1 will no longer be effective when the Air Quality Control (18 AAC 50) regulation package effective 5/3/02 is adopted by the U.S. EPA.

[2] The six-minute average standard is enforceable only by the state until 18 AAC 50.055(a)(1), dated May 3, 2002, is approved by EPA into the SIP at which time this standard becomes federally enforceable.

5. Sulfur Compound Emissions. In accordance with 18 AAC 50.055(c), the Permittee shall not cause or allow sulfur compound emissions, expressed as SO_2, from Source IDs 1 through 7 to exceed 500 ppm averaged over three hours.

[18 AAC 50.346(c), 5/3/02; 18 AAC 50.055(c), 1/18/97; and 18 AAC 50.350(d)(1)(C), 6/21/98]

5.1 Permittee is required to limit fuel oil's sulfur content to no more than 0.2 percent by weight. Compliance with Condition 5 is assured by using a grade of fuel that limits sulfur content to no more than 0.2 percent by weight.

[18 AAC 50.350(e)(3), 1/18/97]

5.2 Obtain a certification of sulfur content for fuel oil shipments of 0.2% sulfur and a statement or receipt from the fuel oil supplier for any other fuel shipments received that certifies the fuel sulfur content. If a certificate is not available from the supplier, then analyze a representative sample of the fuel to be combusted to determine the sulfur content using ASTM method D129-00, D1266-98, D1552-95, D2622-98, D4294-98, D4045-99 or an alternative method approved by the department.

5.3 Record the fuel sulfur content and the fuel grade of each fuel oil shipment.

5.4 Fuel testing under Condition 5.2 must follow an appropriate method listed in 18 AAC 50.035 or another method approved in writing by the Department.

5.5 If a load of fuel contains greater than 0.75 percent sulfur by weight, the Permittee shall calculate SO_2 emissions in ppm using either Section 16 or Method 19 of 40 C.F.R. 60, Appendix A-7, adopted by reference in 18 AAC 50.040(a).

5.6 Compliance with Condition 5 is required by using only gas fuel with a total Sulfur content of no more than 100 ppm by volume in Source IDs 2, 3 and 6.

[18 AAC 50.350(e)(3), 1/18/97]

5.7 Obtain a semiannual statement or receipt from the fuel supplier certifying the fuel gas sulfur concentration in ppm. If a certificate is not available from the supplier, then analyze a representative sample of the fuel no less than once each six months to determine the sulfur content using 40 CFR 60, Appendix A, Method 11 or an alternative method approved by the department.

[18 AAC 50.346(c) & 350(g) - (i), 5/3/02]

5.8 Recordkeeping - Keep records of the semiannual statement from the fuel supplier or the sulfur content analysis required under Conditions 5.2, or 5.7.

[18 AAC 50.350(h), 5/3/02]

5.9 Reporting -

a. Report as excess emissions, in accordance with condition 54:

(i) whenever the fuel combusted causes sulfur compound emissions to exceed the standard of condition 5,

(ii) whenever fuel oil combusted does not meet the 0.2% requirement of Condition 5.1,

(iii) whenever the total sulfur concentration of the fuel gas obtained or analyzed exceeds 100 ppm, or

(iv) if SO_2 emissions calculated under Condition 5.5 exceed 500 ppm. Include the calculation under Section 16.

b. In the operating report required by Condition 56:

(i) attach copies of the records required by Condition 5.2,

(ii) attach copies of the records required by condition 5.7, and

(iii) include copies of the records required by condition 5.9a.

[18 AAC 50.350(i), 1/18/97]

Volatile Organic Liquid Storage Vessels (Tanks) Subject to NSPS Subpart Kb

6. NSPS Subpart Kb Requirements (Recordkeeping Only). For Source ID 8, the Permittee shall keep readily accessible records for the life of the tank showing the dimensions and an analysis showing the capacity of the tank.

[18 AAC 50. 350(h), 5/3/02 & 18 AAC 50.040(a)(2)(M), 8/15/02]
[40 C.F.R. 60.110(c) and 60.116b(a) & (b), Subpart Kb, 7/1/01]

Section 6. Visible Emissions and PM Monitoring, Recordkeeping and Reporting

Liquid-Fired Sources (Source IDs**) 1, 4, 5, 6A, and 7**)

7. Visible Emissions Monitoring. The Permittee shall observe the exhaust of Source ID(s) 1, 4, 5, 6A & 7 for visible emissions using either the Method 9 Plan under condition 7.1 or the Smoke/No-Smoke Plan under condition 7.2. The Permittee may change visible-emissions plans for a source at any time unless prohibited from doing so by condition 7.3.

[18 AAC 50.350(g), 1/18/97 & 50.346(c), 5/3/02]

7.1 **Method 9 Plan.** For all 18-minute observations in this plan, observe exhaust, following 40 C.F.R. 60, Appendix A-4, Method 9, adopted by reference in 18 AAC 50.040(a), for 18 minutes to obtain 72 consecutive 15-second opacity observations.

a. First Method 9 Observation. Observe exhaust for 18 minutes by September 11, 2003, or within 14 calendar days after changing from the Smoke/No-Smoke Plan of condition 7.2, whichever is later.

b. Monthly Method 9 Observations. After the first Method 9 observation, perform 18-minute observations at least once in each calendar month that a source operates.

c. Semiannual Method 9 Observations. After observing emissions for three consecutive operating months under condition 7.1b, unless a six-minute average is greater than 15 percent and one or more observations are greater than 20 percent, observe emissions at least semiannually for 18 minutes.

Semiannual observations must be taken between four and seven months after the previous set of observations.

d. Annual Method 9 Observations. After at least two semiannual 18-minute observations, unless a six-minute average is greater than 15 percent and one or more individual observations are greater than 20 percent, observe emissions at least annually.

Annual observations must be taken between 10 and 13 months after the previous observations and must include at least three 18-minute sets of observations.

e. Increased Method 9 Frequency. If a six-minute average opacity is observed during the most recent set of observations to be greater than 15 percent and one or more observations are greater than 20 percent, then increase or maintain the 18-minute observation frequency for that source to at least monthly intervals, until the criteria in condition 7.1c for semiannual monitoring are met.

[AQC permit 227CP01, 3/11/03]

7.2 **Smoke/No Smoke Plan.** Observe the exhaust for the presence or absence of visible emissions, excluding condensed water vapor.

a. Initial Monitoring Frequency. Observe the exhaust during each calendar day that a source operates.

b. Reduced Monitoring Frequency. After the source has been observed on 30 consecutive operating days, if the source operated without visible smoke in the exhaust for those 30 days, then observe emissions at least once in every calendar month that a source operates.

c. Smoke Observed. If smoke is observed, either begin the Method 9 Plan of condition 7.1 or perform the corrective action required under condition 7.3.

7.3 **Corrective Actions Based on Smoke/No Smoke Observations.** If visible emissions are present in the exhaust during an observation performed under the Smoke/No Smoke Plan of condition 7.2, then the Permittee shall either follow the Method 9 plan of condition 7.1 or

a. initiate actions to eliminate smoke from the source within 24 hours of the observation;

b. keep a written record of the starting date, the completion date, and a description of the actions taken to reduce smoke; and

c. after completing the actions required under condition 7.3a,

(i) take Smoke/No Smoke observations in accordance with condition 7.2

(A) at least once per day for the next seven operating days and until the initial 30 day observation period is completed; and

(B) continue as described in condition 7.2b; or

(ii) if the actions taken under condition 7.3a do not eliminate the smoke, or if subsequent smoke is observed under the schedule of condition 7.3c(i)(A), then observe the exhaust using the Method 9 Plan unless the Department gives written approval to resume observations under the Smoke/No Smoke Plan; after observing smoke and making observations under the Method 9 Plan, the Permittee may at any time take corrective action that eliminates smoke and restart the Smoke/No Smoke Plan under condition 7.2a.

8. Visible Emissions Recordkeeping. The Permittee shall keep records in accordance with this condition 8.

[18 AAC 50.350(h) & 50.346(c), 5/3/02]

8.1 If using the Method 9 Plan of condition 7.1

a. the observer shall record

(i) the name of the facility, emissions source and location, facility type, observer's name and affiliation, and the date on the Visible Emissions Field Data Sheet in Section 15;

(ii) the time, estimated distance to the emissions location, approximate wind direction, estimated wind speed, description of the sky condition (presence and color of clouds), plume background, and operating rate (load or fuel consumption rate) on the sheet at the time opacity observations are initiated and completed;

(iii) the presence or absence of an attached or detached plume and the approximate distance from the emissions outlet to the point in the plume at which the observations are made;

(iv) opacity observations to the nearest five percent at 15-second intervals on the Visible Emissions Observation in Section 15, and

(v) the minimum number of observations required by the permit; each momentary observation recorded shall be deemed to represent the average opacity of emissions for a 15-second period;

b. to determine the six-minute average opacity, divide the observations recorded on the record sheet into sets of 24 consecutive observations; sets need not be consecutive in time and in no case shall two sets overlap; for each set of 24 observations, calculate the average by summing the opacity of the 24 observations and dividing this sum by 24; record the average opacity on the sheet;

c. calculate and record the highest 6-consecutive-minute averages observed for each source.

8.2 If using the Smoke/No Smoke Plan of condition 7.2, record the following information in a written log for each observation and submit copies of the recorded information upon request of the Department:

a. the date and time of the observation;

b. from Table 1, the ID of the source observed;

c. whether visible emissions are present or absent in the exhaust;

d. a description of the background to the exhaust during the observation;

e. if the source starts operation on the day of the observation, the startup time of the source;

f. name and title of the person making the observation; and

g. operating rate (load or fuel consumption rate).

9. Visible Emissions Reporting. The Permittee shall report visible emissions as follows:

[18 AAC 50.350(i), 1/18/97 & 50.346(c), 5/3/02]

9.1 include in each facility operating report under condition 56

a. which visible-emissions plan of condition 7 was used for each source; if more than one plan was used, give the time periods covered by each plan;

b. for each source under the Method 9 Plan,

(i) copies of the observation results (i.e. opacity observations) for each source that used the Method 9 Plan, except for the observations the Permittee has already supplied to the Department; and

(ii) a summary for each source to include:

(A) number of days observations were made;

(B) highest six-minute average observed; and

(C) dates when one or more observed six-minute averages were greater than 20 percent;

c. for each source under the Smoke/No Smoke Plan, the number of days that Smoke/No Smoke observations were made and which days, if any, that smoke was observed; and

d. a summary of any monitoring or record keeping required under conditions 7and 8 that was not done;

9.2 report under condition 54:

a. the results of Method 9 observations that exceed an average 20 percent for any six-minute period; and

b. if any monitoring under condition 7 was not performed when required, report within three days of the date the monitoring was required.

10. Particulate Matter Monitoring for Diesel Engines. The Permittee shall conduct source tests on diesel engines 1, 4, 5, 6A, & 7, to determine the concentration of particulate matter (PM) in the exhaust of a source in accordance with this condition 10.

[18 AAC 50.350(g), 1/18/97 & 50.346(c), 5/3/02]

10.1 Within six months of exceeding the criteria of condition 10.2a or 10.2b, either

a. conduct a PM source test according to requirements set out in Section 12; or

b. make repairs so that emissions no longer exceed the criteria of condition 10.2; to show that emissions are below those criteria, observe emissions as described in condition 7.1 under load conditions comparable to those when the criteria were exceeded.

10.2 Conduct the test according to condition 10.1 if

a. 18 consecutive minutes of Method 9 observations result in an 18-minute average opacity greater than 20 percent; or

b. for a source with an exhaust stack diameter that is less than 18 inches, 18 consecutive minutes of Method 9 observations result in an 18-minute average opacity that is greater than 15 percent and not more than 20 percent, unless the Department has waived this requirement in writing.

10.3 During each one-hour PM source test run, observe the exhaust for 60 minutes in accordance with Method 9 and calculate the average opacity that was measured during each one-hour test run. Submit a copy of these observations with the source test report.

10.4 The automatic PM source test requirement in conditions 10 and 10.2 is waived for an emissions unit if a PM source test on that unit has shown compliance with the PM standard during this permit term.

11. Particulate Matter Record Keeping for Diesel Engines.

11.1 Report any changes in stack height and diameter in accordance with Condition 26.

[18 AAC 50.350(h) & 50.346(c), 5/3/02]

12. Particulate Matter Reporting for Diesel Engines. The Permittee shall report as follows:

[18 AAC 50.350(i), 1/18/97 & 50.346(c), 5/3/02]

12.1 report under condition 54

a. the results of any PM source test that exceeds the PM emissions limit; or

b. if one of the criteria of condition 10.2 was exceeded and the Permittee did not comply with either Condition 10.1a or 10.1b, this must be reported by the day following the day compliance with Condition 10.1 was required;

12.2 report observations in excess of the threshold of Condition 10.2b within 30 days of the end of the month in which the observations occur;

12.3 in each facility operating report under Condition 56, include

a. the dates, Source ID(s), and results when an observed 18-minute average was greater than an applicable threshold in Condition 10.2;

b. a summary of the results of any PM testing under Condition 10; and

c. copies of any visible emissions observation results (opacity observations) greater than the thresholds of Condition 10.2, if they were not already submitted.

Section 7. Owner Requested limits

13. To avoid classification as a prevention of significant deterioration (PSD) major facility, the permittee must limit the facility NO_X emissions to no greater than 246 tons per 12 consecutive month period by:

[AQC permit 227CP01, 3/11/03]

13.1 Limiting the diesel fuel fired source NO_X emissions to no greater than 139 tons per 12 consecutive month period.

13.2 Limiting the gas fuel fired source NO_X emissions to no greater than 107 tons per 12 consecutive month period.

13.3 Calculate and record the NOx emissions by using the method in Condition 17.

13.4 Report in accordance with Condition 54 when the limits of Condition 13 are exceeded.

[18 AAC 50.350(g) –(i), 1/18/97]

Operating Limits

14. Upon Source ID 6 startup, limit the cumulative operating hours for:

[AQC permit 227CP01, 3/11/03]

14.1 Each of Source ID(s) 1 and 4 not to exceed a total of 500 hours per 12 month rolling period.

14.2 Source ID 5 not to exceed a total of 1,700 hours per 12 month rolling period.

14.3 Source ID 7 not to exceed a total of 250 hours per 12 month rolling period.

15. Before initial startup of Source ID 6, equip each of Source ID(s). 1 through 7 with a dedicated engine hour meter. Not later than **November 30, 2003,** submit to the department the vendor data and copies of the technical data of the installed engine operating hour meters. The inaccuracy of the hour meters shall be no more than 0.1 percent.

[AQC permit 227CP01, 3/11/03]

15.1 For Source IDs 1 through 7, record the hour-meter reading no less than once each calendar month after startup of Source ID 6.

15.2 Report as set out in Condition 56 the twelve-consecutive month total hours of operation of the Source ID(s) 1 through 7.

15.3 Report in accordance with Condition 54 when the limits of Condition 14 are exceeded.

[18 AAC 50.350(g) –(i), 1/18/97]

16. Fuel Consumption Limit:

[AQC permit 227CP01, 3/11/03]

16.1 Limit total on-site fuel oil consumption to no greater than 400,000 gallons per 12 consecutive month period upon installation of Source ID 6.

16.2 Before initial start up of Source ID 6, equip the Source ID(s) 1 through 7 with dedicated certified fuel meters to total the fuel consumption of each source. The fuel meter inaccuracy shall be less than five percent.

16.3 Not later than **October 31, 2003,** submit to the department the vendor specifications and copies of the fuel meter certification for Source IDs. 1, 4, 5 and 7

16.4 No later than **November 30, 2003**, submit to the department the vendor specifications and copies of the meter certification for Source ID(s) 2, 3, and 6.

16.5 Re-certify the fuel meters for Source ID(s) 1, through 7 every 60 months after the installation date of the fuel meters.

16.6 Upon initial startup of Source ID 6, monitor and record the diesel fuel consumption for each diesel source in operation (gallons) no less than once a month. Calculate and record the total diesel fuel consumption per 12 consecutive months by summing the monthly fuel consumption for all fuel burning equipment.

16.7 Report as set out in Condition 56 the facility total twelve consecutive month period diesel oil consumption.

16.8 Report in accordance with Condition 54 when the limit of Condition 16.1 is exceeded.

[18 AAC 50.350(g) –(i), 1/18/97]

17. **After October 31, 2003,** except as provided for in Condition 17.2, calculate the monthly NO_X emission rate for each emission unit (expressed as NO_2) by multiplying the fuel specific emission rate (worst case vendor data) as listed in Section 18, by the unit's monthly fuel consumption from Condition 16.2. For any period during which monthly fuel consumption records are not recorded or records are suspect, then use the maximum design fuel consumption for each recorded hour of source operation. The permittee may upon written approval use Site-specific emission factors.

Formula: $E = F \times C/2000$ where: E = Emission rate [ton/month]

F = Emission Factor, fuel basis [lb NO_X/gallon or lb NO_X/Mscf]

C = Fuel consumption [gallon/month or Mscf/month]

17.1 Calculate and record the monthly NO_X emission rate by summing the NO_X emission rate of each source. Calculate and record the diesel equipment NO_X emissions and gas-fired equipment NO_X emissions per 12 consecutive month period by summing the monthly NO_X emissions.

17.2 If the total 12 consecutive month NO_X emissions for all the facility sources exceed 225 tons, then within 60 days conduct a NO_X emission source test on each source. The emission source test shall represent no less than 4 loads of each unit, including the minimum, maximum and two mid range load points. Conduct the test in accordance with 40 CFR 60, Appendix A Test Method 7E. Monitor and record each unit's fuel consumption during the emission source test. Derive a fuel-specific NO_X emission factor for each load using emission rate methodology as is set out in 40 CFR 60 Appendix A, Method 19. Upon department approval, use site- and fuel-specific emissions factors and the methodology described in Condition 17 to calculate the 12 consecutive month period emissions for each unit.

[AQC permit 227CP01, 3/11/03]

Reporting

18. After October 31, 2003, report as set out in Condition 56.

18.1 The twelve consecutive month period total hours of operation of the Source IDs 1, 4, 5, and 7.

18.2 The twelve consecutive month period total NO_X emissions from the gas-fired Sources ID 2, 3 and 6.

18.3 The twelve consecutive month period total NO_X emissions from the diesel oil fired Sources ID 1, 3, 5, and 7.

18.4 Report in accordance with Condition 56.2 when the limits of Condition 13 are exceeded.

[18 AAC 50.350(g) –(i), 1/18/97]

Section 8. Facility-Wide Requirements

Halon Prohibitions, 40 CFR 82

19. The Permittee shall comply with the following prohibitions set out in 40 CFR 82.174 (Protection of Stratospheric Ozone Subpart G – Significant New Alternatives Policy Program).

[40 CFR 82.174 (b) - (d), 7/1/01]
[18 AAC 50.040(d), 8/15/02]

19.1 Do not use a substitute which a person knows or has reason to know was manufactured, processed, or imported in violation of the regulations of 40 CFR 82 Subpart G or knows or has reason to know was manufactured, processed, or imported in violation of any use restriction in the acceptability determination, after the effective date of any rulemaking imposing such restrictions.

19.2 Do not use a substitute without adhering to any use restrictions set by the acceptability decision, after the effective date of any rulemaking imposing such restrictions.

19.3 Do not use a substitute after the effective date of any rulemaking adding such substitute to the list of unacceptable substitutes.

20. The Permittee shall comply with the following prohibitions set out in 40 CFR 82.270.

[40 CFR 82.270 (b)-(f), 7/1/01]

20.1 No person testing, maintaining, servicing, repairing, or disposing of halon-containing equipment or using such equipment for technician training may knowingly vent or otherwise release into the environment any halons used in such equipment, as follows:

a. De minimis[3] releases associated with good faith attempts to recycle or recover halon are not subject to this prohibition.

b. Release of residual halon contained in fully discharged total flooding fire extinguishing systems would be considered a de minimis release associated with good faith attempts to recycle or recover halon.

c. Release of halons during testing of fire extinguishing systems is not subject to this prohibition if the following four conditions are met:

(i) systems or equipment employing suitable alternative fire extinguishing agents are not available;

(ii) system or equipment testing requiring release of extinguishing agent is essential to demonstrate system or equipment functionality;

[3] Legal term meaning “of minimum importance”.

(iii) failure of the system or equipment would pose great risk to human safety or the environment; and

(iv) a simulant agent cannot be used in place of the halon during system or equipment testing for technical reasons.

d. Releases of halons associated with research and development of halon alternatives, and releases of halons necessary during analytical determination of halon purity using established laboratory practices are exempt from this prohibition.

e. This prohibition does not apply to qualification and development testing during the design and development process of halon-containing systems or equipment when such tests are essential to demonstrate system or equipment functionality and when a suitable simulant agent cannot be used in place of the halon for technical reasons.

f. This prohibition does not apply to the emergency release of halons for the legitimate purpose of fire extinguishing, explosion inertion, or other emergency applications for which the equipment or systems were designed.

20.2 Organizations that employ technicians who test, maintain, service, repair or dispose of halon-containing equipment shall take appropriate steps to ensure that technicians hired on or before April 6, 1998 will be trained regarding halon emissions reduction by September 1, 1998. Technicians hired after April 6, 1998 shall be trained regarding halon emissions reduction within 30 days of hiring, or by September 1, 1998, whichever is later.

20.3 No person shall dispose of halon- containing equipment except by sending it for halon recovery to a manufacturer operating in accordance with NFPA[4] 10 and NFPA 12A standards, a fire equipment dealer operating in accordance with NFPA 10 and NFPA 12A standards or a recycler operating in accordance with NFPA 10 and NFPA 12A standards. This provision does not apply to ancillary system devices such as electrical detection control components which are not necessary to the safe and secure containment of the halon within the equipment, to fully discharged total flooding systems, or to equipment containing only de minimis quantities of halons.

20.4 No person shall dispose of halon except by sending it for recycling to a recycler operating in accordance with NFPA 10 and NFPA 12A standards, or by arranging for its destruction using one of the following controlled processes:

a. Liquid injection incineration;

b. Reactor cracking;

c. Gaseous/fume oxidation;

[4] National Fire Protection Association

d. Rotary kiln incineration;

e. Cement kiln;

f. Radio frequency plasma destruction; or

g. An EPA-approved destruction technology that achieves a destruction efficiency of 98 percent or greater.

20.5 No owner of halon-containing equipment shall allow halon release to occur as a result of failure to maintain such equipment.

Section 9. Insignificant Sources

This section contains the requirements that the Permittee identified under 18 AAC 50.335(q)(2) as applicable to insignificant sources at the facility. Since this facility is classified as a "minor" facility, the requirements in this section also apply to all fuel-burning and industrial process sources at the facility. This section also specifies the testing, monitoring, recordkeeping, and reporting for insignificant sources that the Department finds necessary to ensure compliance with the applicable requirements. Insignificant sources are not exempted from any air quality control requirement or federally enforceable requirement.

As set out in 18 AAC 50.350(m), the shield of AS 46.14.290 does not apply to these sources.

21. For sources at the facility that are insignificant as defined in 18 AAC 50.335(q)-(v) that are not listed in this permit, the following apply:

21.1 The Permittee shall submit the compliance certifications of condition 57 based on reasonable inquiry;

21.2 The Permittee shall comply with the requirements of condition 37;

21.3 The Permittee shall report in the operating report required by condition 56 if a source is insignificant because of actual emissions less than the thresholds of 18 AAC 50.335(r) and actual emissions become greater than any of those thresholds;

21.4 No other monitoring, recordkeeping or reporting is required.

[18 AAC 50.346(b)(1), 5/3/02]

22. The Permittee shall not cause or allow visible emissions, excluding condensed water vapor, emitted from an industrial process, fuel-burning equipment, or an incinerator to reduce visibility through the exhaust effluent by any of the following:

22.1 more than 20 percent for a total of more than three minutes in any one hour[5];

[18 AAC 50.050(a)(2) & 50.055(a)(1), 1/18/97]
[40 C.F.R. 52.70, 7/01/01]

22.2 more than 20 percent averaged over any six consecutive minutes[6].

[18 AAC 50.050(a) & 50.055(a)(1), 5/3/02]

23. The Permittee shall not cause or allow particulate matter emitted from an industrial process or fuel-burning equipment to exceed 0.05 grains per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.

[18 AAC 50.055(b)(1), 1/18/97]

24. The Permittee shall not cause or allow sulfur compound emissions, expressed as SO_2, from an industrial process or fuel-burning equipment, to exceed 500 ppm averaged over three hours.

[5] See Footnote 1.
[6] See Footnote 2.

[18 AAC 50.055(c), 1/18/97]

Section 10. Compliance Plan and Schedule

As set out in 18 AAC 50.350(k)(5), the compliance plan and schedule included in this Operating Permit do not provide the shield of AS 46.14.290 and do not prevent the Department from pursuing an enforcement action.

25. **No later than October 31, 2003**, extend the existing exhaust stacks to minimum height or replace with stacks that meet the minimum height requirements of Table 2.

Table 2
Stack Modifications

Source ID	Source description	Minimum Stack Height	Stack orientation
1	CAT D 3512	**15.00**	Vertical
2	CAT G 3516	**14.00**	Vertical
3	CAT G 3516	**14.00**	Vertical
4	CAT D 3512	**15.00**	Vertical
5	EMD V20-645E	**16.00**	Vertical
6	CAT G 3616	**13.72**	Vertical
7	CAT D 343	**14.00**	Vertical

- Stack height is the height in meters [m] measured from the existing grade to the top of the stack.
- The inside diameter of the modified stack is to be the same as the existing stack diameter.
- No hindrance to stack exit velocity such as a rain cap is allowed.

26. **No later than November 30, 2003,** submit to the department a written notice listing the date by which the stack modifications of Condition 25 are completed, and report the "as-built" stack heights, orientation/location-plan and inside diameter of each stack after the modification. Include photographs showing each stack relative to the power plant building and surrounding terrain.

27. Permanently replace Source ID 6A with Source ID 6 no later than **October 31**, **2003.**

27.1 Within two days after Source ID 6 initial startup, disconnect / blind off the fuel supply and return lines of the Source ID 6A (CAT D 3616 diesel generator);

27.2 **No later than August 31, 2004**, remove the Source ID 6A from the Power Plant Property. Submit to the department a written notice; listing the date during which Source ID 6A was removed from the facility.

27.3 Within 5 days after **initial start up of Source ID 6**, submit to the department a written notice; listing the date of the initial start up of Source ID 6.

28. Notwithstanding the regulations set forth in 18 AAC 50.300(h), the permittee shall notify the department, in accordance with the following conditions, within 7 days after:

28.1 Installing a stationary emission source at the facility that is not listed in Table 1 or

28.2 Making a physical or operational change to a source listed in Table 1 that would cause a net increase in the emissions of a regulated air contaminant.

29. Track and report in the Facility Operating Report required by Condition 56, the use of permanent and temporary nonroad engines installed after final issue date of this permit that have a size rating greater than 200 Brake Horsepower. Include in the report: the engine's size, serial number and tag number if assigned, and the dates that the engine arrived at the facility, initially started up on-site, finally shut down on-site, and was removed from the facility.

30. **By December 15, 2003**, the Permittee shall submit an explanation of why any activity, milestone, or compliance required by the above conditions was not or will not be met and a description of any preventive or corrective measure adopted.

Section 11. Generally Applicable Requirements

31. Asbestos NESHAP. The Permittee shall comply with the requirements set forth in 40 C.F.R. 61.145, 61.150, and 61.152, Subpart M, and the applicable sections set forth in 40 C.F.R. 61, Subpart A and Appendix A.

[18 AAC 50.040(b)(3), 8/15/02 & 50.350(d)(1)(A), 1/18/97]
[40 C.F.R. 61, Subparts A & M, and Appendix A, 7/1/01]

32. Refrigerant Recycling and Disposal. The Permittee shall comply with the standards for recycling and emission reduction of refrigerants set forth in 40 C.F.R. 82, Subpart F.

[18 AAC 50.040(d), 8/15/02 & 50.350(d)(1)(A), 1/18/97]
[40 C.F.R. 82, Subpart F, 7/1/01]

33. Good Air Pollution Control Practice. The Permittee shall do the following for Source ID(s) 1 through 7:

a. Perform regular maintenance considering the manufacturer's or the operator's maintenance procedures;

b. Keep records of any maintenance that would have a significant effect on emissions; the records may be kept in electronic format;

c. Keep a copy of either the manufacturer's or the operator's maintenance procedures.

[18 AAC 50.030 & 50.346(b)(2), 5/3/02 & 18 AAC 50.350(f)(2) & (3), 1/18/97]

34. Dilution. The Permittee shall not dilute emissions with air to comply with this permit.

[18 AAC 50.045(a), 1/18/97]

35. Reasonable Precautions to Prevent Fugitive Dust. A person who causes or permits bulk materials to be handled, transported, or stored, or who engages in an industrial activity or construction project shall take reasonable precautions to prevent particulate matter from being emitted into the ambient air. Monitoring shall consist of an annual certification that reasonable precautions were taken.

[18 AAC 50.346(c), 5/3/02; 18 AAC 50.045(d) & 50.335(g), 1/18/97 & 18 AAC 50.040(e), 7/2/00]

36. Stack Injection. The Permittee shall not release materials other than process emissions, products of combustion, or materials introduced to control pollutant emissions from a stack at a source constructed or modified after November 1, 1982, unless approved in writing by the Department.

[18 AAC 50.055(g), 1/18/97]

37. Air Pollution Prohibited. No person may permit any emission which is injurious to human health or welfare, animal or plant life, or property, or which would unreasonably interfere with the enjoyment of life or property.

[18 AAC 50.346(a)(2), 5/3/02; 18 AAC 50.110, 5/26/72; 18 AAC 50.040(e), 8/15/02]

37.1 If emissions present a potential threat to human health or safety, the Permittee shall report any such emissions according to Condition 54.

37.2 As soon as practicable after becoming aware of a complaint that is attributable to emissions from the facility, the Permittee shall investigate the complaint to identify emissions that the Permittee believes have caused or are causing a violation of Condition 37.

37.3 The Permittee shall initiate and complete corrective action necessary to eliminate any violation identified by a complaint or investigation as soon as practicable if

a. after an investigation because of a complaint or other reason, the Permittee believes that emissions from the facility have caused or are causing a violation of Condition 37; or

b. the Department notifies the Permittee that it has found a violation of Condition 37.

37.4 The Permittee shall keep records of

a. the date, time, and nature of all emissions complaints received;

b. the name of the person or persons that complained, if known;

c. a summary of any investigation, including reasons the Permittee does or does not believe the emissions have caused a violation of condition 37; and

d. any corrective actions taken or planned for complaints attributable to emissions from the facility.

37.5 With each facility operating report under condition 56, the Permittee shall include a brief summary report which must include

a. the number of complaints received;

b. the number of times the Permittee or the Department found corrective action necessary;

c. the number of times action was taken on a complaint within 24 hours; and

d. the status of corrective actions the Permittee or Department found necessary that were not taken within 24 hours.

37.6 The Permittee shall notify the Department of a complaint that is attributable to emissions from the facility within 24 hours after receiving the complaint, unless the Permittee has initiated corrective action within 24 hours of receiving the complaint.

[18 AAC 50.346(a)(2) & 50.350(g) - (i), 5/3/02]

38. Technology-Based Emission Standard. If an unavoidable emergency, malfunction, or non-routine repair, as defined in 18 AAC 50.235, causes emissions in excess of a technology-based emission standard[7] listed in Condition, 32, the Permittee shall take all reasonable steps to minimize levels of emissions that exceed the standard. Excess emissions reporting under condition 54 requires information on the steps taken to minimize emissions. Monitoring of compliance for this condition consists of the report required under condition 54.

[18 AAC 50.235(a) & 50.350(f)(3), 1/18/97]

39. Permit Renewal. To renew this permit, the Permittee shall submit an application under 18 AAC 50.335 no sooner than **January 29, 2007** and no later than **January 29, 2008.**

[18 AAC 50.335(a), 1/18/97]

[7] *Technology-based emission standard* means a best available control technology standard (BACT); a lowest achievable emission rate standard (LAER); a maximum achievable control technology standard established 40 C.F.R. 63, Subpart B, adopted by reference in 18 AAC 50.040(c); a standard adopted by reference in 18 AAC 50.040(a) or (c); and any other similar standard for which the stringency of the standard is based on determinations of what is technologically feasible, considering relevant factors.

Section 12. General Source Testing and Monitoring Requirements

40. Requested Source Tests. In addition to any source testing explicitly required by the permit, the Permittee shall conduct source testing as requested by the Department to determine compliance with applicable permit requirements.

[18 AAC 50.220(a), 1/18/97 & 18 AAC 50.345(a) & (k), 5/3/02]

41. Operating Conditions. Unless otherwise specified by an applicable requirement or test method, the Permittee shall conduct source testing

[18 AAC 50.220(b) & 50.350(g), 1/18/97]

41.1 at a point or points that characterize the actual discharge into the ambient air; and

41.2 at the maximum rated burning or operating capacity of the source or another rate determined by the Department to characterize the actual discharge into the ambient air.

42. Reference Test Methods. The Permittee shall use the following as reference test methods when conducting source testing for compliance with this permit:

42.1 Source testing for the reduction in visibility through the exhaust effluent must be conducted in accordance with the procedures set out in Reference Method 9.

[18 AAC 50.030, 5/3/02, 18 AAC 50.220(c)(1)(D) & 50.350(g), 1/18/97]

42.2 Source testing for emissions of total particulate matter, sulfur compounds, nitrogen compounds, carbon monoxide, lead, volatile organic compounds, fluorides, sulfuric acid mist, municipal waste combustor organics, metals, and acid gases must be conducted in accordance with the methods and procedures specified in 40 C.F.R. 60, Appendix A.

[18 AAC 50.040(a)(4), 8/15/02 & 18 AAC 50.220(c)(1)(E) & 50.350(g), 1/18/97]
[40 C.F.R. 60, Appendix A, 7/1/01]

42.3 Source testing for emissions of any contaminant may be determined using an alternative method approved by the Department in accordance with 40 C.F.R. 63 Appendix A, Method 301.

[18 AAC 50.040(c)(19), 5/3/02 & 18 AAC 50.220(c)(2) & 50.350(g), 1/18/97]
[40 C.F.R. 63, Appendix A, Method 301, 4/5/02]

43. Excess Air Requirements. To determine compliance with this permit, standard exhaust gas volumes must only include the volume of gases formed from the theoretical combustion of fuel, plus the excess air volume normal for the specific source type, corrected to standard conditions (dry gas at 68° F and an absolute pressure of 760 millimeters of mercury).

[18 AAC 50.220(c)(3), 18 AAC 50.350(g), 1/18/97 & 18 AAC 50.990(88), 5/3/02]

44. Test Exemption. The Permittee is not required to comply with conditions 46, 47 and 48 when the exhaust is observed for visible emissions by Method 9 Plan (condition 7.1) or Smoke/No Smoke Plan (condition 7.2)

[18 AAC 50.345(a), 5/3/02]

45. Test Deadline Extension. The Permittee may request an extension to a source test deadline established by the Department. The Permittee may delay a source test beyond the original deadline only if the extension is approved in writing by the Department's appropriate division director or designee.

[18 AAC 50.345(a) & (l), 5/3/02]

46. Test Plans. Except as provided in condition 44, before conducting any source tests, the Permittee shall submit a plan to the Department. The plan must include the methods and procedures to be used for sampling, testing, and quality assurance and must specify how the source will operate during the test and how the Permittee will document that operation. The Permittee shall submit a complete plan within 60 days after receiving a request under condition 40 and at least 30 days before the scheduled date of any test unless the Department agrees in writing to some other time period. Retesting may be done without resubmitting the plan.

[18 AAC 50.345(a) & (m), 5/3/02]

47. Test Notification. Except as provided in condition 44, at least 10 days before conducting a source test, the Permittee shall give the Department written notice of the date and the time the source test will begin.

[18 AAC 50.345(a) & (n), 5/3/02]

48. Test Reports. Except as provided in condition 44, within 60 days after completing a source test, the Permittee shall submit two copies of the results in the format set out in the *Source Test Report Outline*, adopted by reference in 18 AAC 50.030. The Permittee shall certify the results in the manner set out in condition 50. If requested in writing by the Department, the Permittee must provide preliminary results in a shorter period of time specified by the Department.

[18 AAC 50.345(a) & (o), 5/3/02]

49. Particulate Matter Calculations. In source testing for compliance with the particulate matter standards in Conditions, 23, and 4, the three-hour average is determined using the average of three one-hour test runs.

[18 AAC 50.220(f) & 50.350(g), 1/18/97]

Section 13. General Recordkeeping, Reporting, and Compliance Certification Requirements

50. Certification. The Permittee shall certify all reports, compliance certifications, or other documents submitted to the Department and required under the permit by including the signature of a responsible official for the permitted facility following the statement: "Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete." Excess emission reports must be certified either upon submittal or with an operating report required for the same reporting period. All other reports and other documents must be certified upon submittal. When certifying a compliance certification, the official's signature must be notarized.

[18 AAC 50.205 and 50.350(b)(3) & (j), 1/18/97; and 18 AAC 50.345(a) & (j), 5/3/02]

51. Submittals. Unless otherwise directed by the Department or this permit, the Permittee shall send two copies of reports, compliance certifications, and other documents required by this permit to ADEC, Air Permits Program, 610 University Ave., Fairbanks, AK 99709-3643, ATTN: Compliance Technician. The Permittee may, upon consultation with the Compliance Technician regarding software compatibility, provide electronic copies of data reports, emission source test reports, or other records under a cover letter certified in accordance with condition 50.

[18 AAC 50.350(i), 1/18/97]

52. Information Requests. The Permittee shall furnish to the Department, within a reasonable time, any information the Department requests in writing to determine whether cause exists to modify, revoke and reissue, or terminate the permit or to determine compliance with the permit. Upon request, the Permittee shall furnish to the Department copies of records required to be kept by the permit. The Department may require the Permittee to furnish copies of those records directly to the federal administrator.

[18 AAC 50.200 & 50.350(b)(3), 1/18/97; and 18 AAC 50.345(a) & (i) & 50.350(g) – (i), 5/3/02]

53. Recordkeeping Requirements. The Permittee shall keep all records required by this permit for at least five years after the date of collection, including:

[18 ACC 50.350(h), 5/3/02]

53.1 copies of all reports and certifications submitted pursuant to this section of the permit; and

53.2 records of all monitoring required by this permit, and information about the monitoring including:

a. calibration and maintenance records, original strip chart or computer-based recordings for continuous monitoring instrumentation;

b. sampling dates and times of sampling or measurements;

c. the operating conditions that existed at the time of sampling or measurement;

d. the date analyses were performed;

e. the location where samples were taken;

f. the company or entity that performed the sampling and analyses;

g. the analytical techniques or methods used in the analyses; and

h. the results of the analyses.

54. Excess Emissions and Permit Deviation Reports.

54.1 Except as provided in condition 37, the Permittee shall report all emissions or operations that exceed or deviate from the requirements of this permit as follows:

a. in accordance with 18 AAC 50.240(c), as soon as possible after the event commenced or is discovered, report

(i) emissions that present a potential threat to human health or safety; and

(ii) excess emissions that the Permittee believes to be unavoidable;

b. in accordance with 18 AAC 50.235(a), within two working days after the event commenced or was discovered, report an unavoidable emergency, malfunction, or nonroutine repair that causes emissions in excess of a technology based emission standard;

c. report all other excess emissions and permit deviations

(i) within 30 days of the end of the month in which the emissions or deviation occurs, except as provided in conditions 54.1c(ii);

(ii) if a continuous or recurring excess emissions is not corrected within 48 hours of discovery, within 72 hours of discovery unless the Department provides written permission to report under condition 54.1c(i); and

54.2 When reporting excess emissions, the Permittee must report using either the Department's on-line form, which can be found at http://www.state.ak.us/dec/dawq/aqm/eeform.pdf, or if the Permittee prefers, the form contained in Section 17 of this permit. The Permittee must provide all information called for by the form that is used.

54.3 When reporting a permit deviation, the Permittee must report using either the Department's on-line form, which can be found at http://www.state.ak.us/dec/dawq/aqm/eeform.pdf, or if the Permittee prefers, the form contained in Section 17 of this permit. The Permittee must provide all information called for by the form.

54.4 If requested by the Department, the Permittee shall provide a more detailed written report as requested to follow up an excess emissions report.

[18 AAC 50.235(a)(2), 50.240(c), & 50.350(i), 1/18/97; and 18 AAC 50.346(a)(3), 5/3/02

55. NSPS and NESHAP Reports. The Permittee shall upon request by the Department, notify and provide a written copy of any EPA-granted waiver of the federal emission standards, record keeping, monitoring, performance testing, or reporting requirements, or approved custom monitoring schedules.

[18 AAC 50.040, 8/15/02 & 18 AAC 350(i)(2), 1/18/97]
[40 C.F.R. 60 &. 61, 7/1/01]

56. Operating Reports. During the life of this permit, the Permittee shall submit to the Department one original and one copy of an operating report by August 1 for the period January 1 to June 30 of the current year and by February 1 for the period July 1 to December 31 of the previous year.

56.1 The operating report must include all information required to be in operating reports by other conditions of this permit.

56.2 If excess emissions or permit deviations that occurred during the reporting period are not reported under condition 56.1, either

a. The Permittee shall identify

(i) the date of the deviation;

(ii) the equipment involved;

(iii) the permit condition affected;

(iv) a description of the excess emissions or permit deviation; and

(v) any corrective action or preventive measures taken and the date of such actions; or

b. When excess emissions or permit deviations have already been reported under Condition 54 the Permittee shall cite the date or dates of those reports.

57. Annual Compliance Certification. Each year by March 31, the Permittee shall compile and submit to the Department an original and two copies of an annual compliance certification report as follows:

[18 AAC 50.350(j), 1/18/97]

57.1 For each permit term and condition set forth in Section 4 through Section 13, including terms and conditions for monitoring, reporting, and recordkeeping:

[18 AAC 50.350(d)(4), 6/21/98]

a. certify the compliance status over the preceding calendar year consistent with the monitoring required by this permit;

b. state whether compliance is intermittent or continuous;

c. briefly describe each method used to determine the compliance status; and

d. notarize the responsible official's signature.

[18 AAC 50.205, 1/18/97 & 50.345(a) & (j), 5/3/02]

57.2 In addition, submit a copy of the report directly to the EPA-Region 10, Office of Air Quality, M/S OAQ-107, 1200 Sixth Avenue, Seattle, WA 98101.

[18 AAC 50.350(j), 1/18/97]

Section 14. Standard Conditions Not Otherwise Included in the Permit

58. The Permittee must comply with each permit term and condition. Noncompliance with a permit term or condition constitutes a violation of AS 46.14, 18 AAC 50, and, except for those terms or conditions designated in the permit as not federally enforceable, the Clean Air Act, and is grounds for

58.1 an enforcement action;

58.2 permit termination, revocation and reissuance, or modification in accordance with AS 46.14.280; or

58.3 denial of an operating-permit renewal application.

[18 AAC 50.350(b)(3), 1/18/97 & 18 AAC 50.345(a) & (c), 5/3/02]

59. It is not a defense in an enforcement action to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with a permit term or condition.

[18 AAC 50.350(b)(3), 1/18/97 & 18 AAC 50.345(a) & (d), 5/3/02]

60. Each permit term and condition is independent of the permit as a whole and remains valid regardless of a challenge to any other part of the permit.

[18 AAC 50.350(b)(3), 1/18/97 & 18 AAC 50.345(a) & (e), 5/3/02]

61. Compliance with permit terms and conditions is considered to be compliance with those requirements that are

61.1 included and specifically identified in the permit; or

61.2 determined in writing in the permit to be inapplicable.

[18 AAC 50.350(b)(3), 1/18/97 & 18 AAC 50.345(a) & (b), 5/3/02]

62. The permit may be modified, reopened, revoked and reissued, or terminated for cause. A request by the Permittee for modification, revocation and reissuance, or termination or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

[18 AAC 50.350(b)(3), 1/18/97 & 18 AAC 50.345(a) & (f), 5/3/02]

63. The permit does not convey any property rights of any sort, nor any exclusive privilege.

[18 AAC 50.350(b)(3), 1/18/97 & 18 AAC 50.345(a) & (g), 5/3/02]

64. The Permittee shall allow the Department or an inspector authorized by the Department, upon presentation of credentials and at reasonable times with the consent of the owner or operator to

64.1 enter upon the premises where a source subject to the permit is located or where records required by the permit are kept;

64.2 have access to and copy any records required by the permit;

64.3 inspect any facility, equipment, practices, or operations regulated by or referenced in the permit; and

64.4 sample or monitor substances or parameters to assure compliance with the permit or other applicable requirements.

[18 AAC 50.350(b)(3), 1/18/97 & 18 AAC 50.345(a) & (h), 5/3/02]

Section 15. Visible Emissions Forms

Visible Emissions Field Data Sheet

Certified Observer: _____

Company & Facility: _____

Location: _____

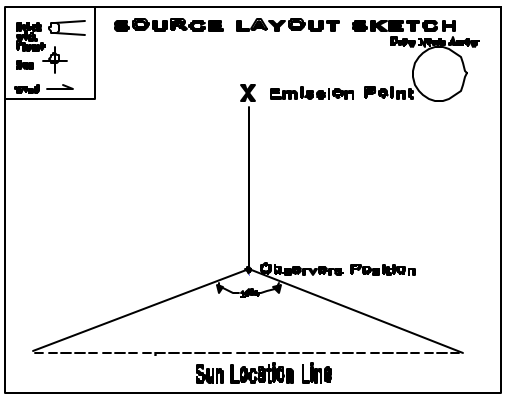
Test No.: _____ Date: _____

Source: _____

Production Rate/Operating Rate: _____

Unit Operating Hours: _____

Hrs. of observation: _____



Clock Time	Initial				Final
Observer location Distance to discharge					
Direction from discharge					
Height of observer point					
Background description					
Weather conditions Wind Direction					
Wind speed					
Ambient Temperature					
Relative humidity					
Sky conditions: (clear, overcast, % clouds, etc.)					
Plume description: Color					
Distance visible					
Water droplet plume? (Attached or detached?)					
Other information					

Visible Emissions Observation Record

Page ___ of ___

Company & Facility _____ Certified Observer_____

Test Number _____ Clock time_____

Date:		Visibility reduction every 15 Seconds (Opacity)				Steam Plume (check if applicable)		Comments
Hr	Min	0	15	30	45	Attached	Detached	

Additional information:

_____ _____

Observer Signature and Date Certified By and Date

Data Reduction:

Duration of Observation Period (minutes) _____ Duration Required by Permit (minutes)_____

Number of Observations _____ Highest Six –Minute Average Opacity (%)_____

Number of Observations exceeding 20 % _____

In compliance with three-minute aggregate opacity limit? (Yes or No) _____

In compliance with six-minute opacity limit? (Yes or No) _____

Average Opacity Summary

Set Number	Time Start—End	Opacity	
		Sum	Average

Section 16. SO_2 Material Balance Calculation

If a fuel shipment contains more than 0.75 percent sulfur by weight, calculate the three-hour exhaust concentration of SO_2 using the following equations:

A = 31,200 X [wt%S_{fuel}] = 31,200 X _____ = _____

B = 0.148 X [wt%S_{fuel}] = 0.148 X _____ = _____

C = 0.396 X [wt%C_{fuel}] = 0.396 X _____ = _____

D = 0.933 X [wt%H_{fuel}] = 0.933 X _____ = _____

E = B + C + D = _____ + _____ + _____ = _____

F = 20.9 – [vol%$_{dry}O_{2,\ exhaust}$] = 20.9 - _____ = _____

G = [vol%$_{dry}O_{2,\ exhaust}$] ÷ F = _____ ÷ _____ = _____

H = 1 + G = 1 + _____ = _____

I = E x H = _____ x _____ = _____

SO_2 concentration = A ÷ I = _____ ÷ _____ = _____ ppm

The wt%S_{fuel}, wt%C_{fuel}, and wt%H_{fuel} are equal to the weight percents of sulfur, carbon, and hydrogen in the fuel. These percentages should total 100%.

The fuel weight percent (wt%) of sulfur is obtained pursuant to condition XI.2. The fuel weight percents of carbon and hydrogen are obtained from the fuel refiner.

The volume percent of oxygen in the exhaust (vol%$_{dry}O_{2,\ exhaust}$) is obtained from oxygen meters, manufacturer's data, or from the most recent analysis under 40 C.F.R. 60, Appendix A-2, Method 3, adopted by reference in 18 AAC 50.040(a), at the same engine load used in the calculation.

Enter all of the data in percentages without dividing the percentages by 100. For example, if **wt%S_{fuel}** = 1.0%, then enter 1.0 into the equations, not 0.01, and if **vol%$_{dry}O_{2,\ exhaust}$** = 3.00%, then enter 3.00, not 0.03.

[18 AAC 50.346(c), 5/3/02]

Section 17. ADEC Notification Form

Fax this form to: (907) 269-7508 Telephone: (907) 269-8888

TDX Power, Inc.
Company Name

TDX North Slope Generating, Inc.
Facility Name

Reason for notification:

❑ **Excess Emissions** — *If you checked this box Fill out section 1*

❑ **Other Deviation from Permit Condition** — *If you checked this box fill out section 2*

When did you discover the Excess Emissions or Other Deviation:
Date:__/__/__ Time:__:__

Section 1. Excess Emissions

(a) Event Information (Use 24-hour clock):

	START Time: (hr:min):	**END** Time:	**Duration**
Date: _____	_____:_____	_____:_____	_____:_____
Date: _____	_____:_____	_____:_____	_____:_____
		Total:	_____:_____

(b) Cause of Event (Check all that apply):

❑ START UP ❑ UPSET CONDITION ❑ CONTROL EQUIPMENT
❑ SHUT DOWN ❑ SCHEDULED MAINTENANCE ❑ OTHER _____

Attach a detailed description of what happened, including the parameters or operating conditions exceeded.

(c) Sources Involved:

Identify each emission source involved in the event, using the same identification number and name as in the permit. List any control device or monitoring system affected by the event. Attach additional sheets as necessary.

Source ID No.	Source Name	Description	Control Device

(d) Emission Limit Potentially Exceeded

Identify each emission standard potentially exceeded during the event. Attach a list of ALL known or suspected injuries or health impacts. Identify what observation or data prompted this report. Attach additional sheets as necessary.

Permit Condition	Limit	Emissions Observed

(e) Excess Emission Reduction:

Attach a description of the measures taken to minimize and/or control emissions during the event.

(f) Corrective Actions:

Attach a description of corrective actions taken to restore the system to normal operation and to minimize or eliminate chances of a recurrence.

(g) Unavoidable Emissions:

Do you intend to assert that these excess emissions were unavoidable?

❑ YES ❑ NO

Do you intend to assert the affirmative defense of 18 AAC 50.235?

❑ YES ❑ NO

Section 2. Other Permit Deviations

(a) Sources Involved:

Identify each emission source involved in the event, using the same identification number and name as in the permit. List any control device or monitoring system affected by the event. Attach additional sheets as necessary.

Source ID No.	Source Name	Description	Control Device

(b) Permit Condition Deviation:

Identify each permit condition deviation or potential deviation. Attach additional sheets as necessary.

Permit Condition	Potential Deviation

(c) Corrective Actions:

Attach a description of actions taken to correct the deviation or potential deviation and to prevent recurrence.

Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete.

Printed Name: Signature: Date:

Section 18. Emission Factors based on Vendor Data.

Source ID	Source Name	Source Description	Fuel Type	Rating / Size	Fuel Specific NO_x Emission Rate
1	Diesel Back Up Generator #1	CAT D 3512	Diesel	1,206 Hp [887 kW] @1,200 RPM	0.680 lb/gallon
2	Gas Peaking Generator #2	CAT G 3516	Gas	1,152 Hp [850 kW] @ 1,200 RPM	0.707 lb/scf x 10^3
3	Gas Peaking Generator #3	CAT G 3516	Gas	1,152 Hp [850 kW] @ 1,200 RPM	0.707 lb/scf x 10^3
4	Diesel Back Up Generator #4	CAT D 3512	Diesel	1,206 Hp [887 kW] @1,200 RPM	0.680 lb /gallon
5	Diesel Back Up Generator #6	EMD V20-645E	Diesel	3,600Hp[2647kW] @ 900 RPM	0.673 lb /gallon
7	Diesel Back Up Generator # 12	CAT D 343	Diesel	406 Hp [299 kW] @ 1,800 RPM	0.205 lb / gallon
6	Gas Main Generator #11	CAT G 3616	Gas	4811Hp[3538kW] @ 900 RPM	0.240 lb/scf x 10^3

Definitions:

- The fuel specific NO_X emission rates are based on Vendors emission data.
- The fuel specific NO_X emission rates are based on :
- Source IDs 1 and 4, 80% engine load factor [962 Hp]
- Source ID 5, 100% engine load factor [3600 Hp]
- Source IDs 2 and 3, 85% engine load factor [1033 Hp]
- Source ID 6, engine load factor >49% [> 2357 Hp]
- Source ID 7, engine load factor 80% [325 Hp]

Alaska Department of Environmental Conservation

Air Permits Program

June 30, 2003

TDX North Slope Generating, Inc.

Deadhorse Power Plant

STATEMENT OF BASIS

of the terms and conditions for

Permit No. 227TVP01

Prepared by Jack Coutts

INTRODUCTION

This document sets forth the statement of basis for the terms and conditions of Operating Permit No. 227TVP01.

FACILITY IDENTIFICATION

Section 1 of Operating Permit No. 227TVP01 contains information on the facility as provided in the Title V permit application.

The facility is owned and operated by TDX – North Slope Generating, Inc. and TDX – North Slope Generating, Inc is the Permittee for the facility's operating permit. The SIC code for this facility is 4911.

The facility is a electric power plant consisting of 7 diesel electric generating sets fueled by oil or natural gas.

SOURCE INVENTORY AND DESCRIPTION

Table 1 of Operating Permit No. 227TVP01 contains information on the sources regulated by this permit as provided in the application. The table is provided for informational and identification purposes only. Specifically, the source rating/size provided in the table is not intended to create an enforceable limit.

The Project Description and Equipment Inventory section of the Technical Analysis Report (TAR) for Construction permit 227CP01 gives much more detail on sources and emissions. That section of the TAR is attached as Appendix A to this Statement of Basis.

EMISSIONS

Section 2 of Operating Permit No. 227TVP01 contains emission information as provided in the Title V application. A summary of the potential to emit (PTE)[8] and assessable PTE as calculated by the Department from vendor data is shown in Table A below.

[8] *Potential to Emit or PTE* means the maximum quantity of a release of an air contaminant, considering a facility's physical or operational design, based on continual operation of all sources within the facility for 24 hours a day, 365 days a year, reduced by the effect of pollution control equipment and approved state or federal limitations on the capacity of the facility's sources or the facility to emit an air contaminant, including limitations such as restrictions on hours or rates of operation and type or amount of material combusted, stored, or processed as defined in AS 46.14.990(21), effective 1/18/97.

Table A - Emissions Summary, in Tons Per Year (TPY)

Pollutant	NO_X	CO	PM-10	SO_2	VOC	Total
PTE	246	154	17	9	86	512
Assessable PTE	246	154	17	0	86	503

The assessable PTE listed under condition 1.1 is the sum of the emissions of each individual regulated air contaminant for which the facility has the potential to emit quantities greater than 10 TPY. The emissions listed in Table A are estimates that are for informational use only. The listing of the emissions does not create an enforceable limit to the facility.

For criteria pollutants, emissions are as provided in the Technical Analysis Report for Construction permit 227CP01.

BASIS FOR REQUIRING AN OPERATING PERMIT

Section 2 of Operating Permit No. 227TVP01 lists the regulatory classifications of the facility.

This facility would be classified as a Prevention of Significant Deterioration (PSD) Major Facility as defined in 18 AAC 50.300(c)(1), because it has the unlimited potential to emit more than 250 TPY of NO_X. However, permittee has made an owner requested operating limits to keep the emission to less than 250 TPY. This facility requires an operating permit under 18 AAC 325(b)(1) because it has a potential to emit of more than 100 TPY.

Alaska regulations require operating permit applications to include identification of "regulated sources." As applied to the TDX – North Slope Generating, Inc. power plant, the state regulations require a description of:

⇒ Each source regulated by a standard in 18 AAC 50.055, Industrial Processes and Fuel Burning Equipment, under18 AAC 50.335(e)(4)(C);

⇒ Each source subject to a standard adopted by reference in 18 AAC 50.040 under 18 AAC 50.335(e)(2); and

⇒ Sources subject to requirements in an existing Department permit 18 AAC 50.335(e)(5).

The emission sources at TDX – North Slope Generating, Inc. power plant classified as "regulated sources" according to the above Department regulations are listed in Table 1 of Operating Permit No. 227TVP01.

CURRENT AIR QUALITY PERMITS

Previous Air Quality Permit to Operate

No previous air quality control permit-to-operate exists for this facility.

Construction Permits

Construction Permit No. 227CP01 was issued to this facility on March 11, 2003. The facility-specific requirements established in this construction permit are included in the new operating permit as described in Table B.

Title V Operating Permit Application History

The previous owner or operator submitted an application on December 4, 1997. The operating permit could not be issued until the BACT and modeling studies for the construction permit were completed or identified in a compliance plan and schedule. Correspondence from 1999 through 2001 was directed at completing these studies. Also, in that time period the facility was sold by Arctic Utilities to TDX Power corporation.

COMPLIANCE HISTORY

The facility has operated at its current location since the 1980s. Review of the permit files for this facility, indicate a facility which had been operating without an operating permit. A Notice of Violation (NOV) for operating without a permit was issued April 21, 2000. Action on the NOV resulted in a Compliance Order By Consent (COBC) being issued on December 31, 2002. Outstanding issues remaining from the COBC have been put into Section 10, the Compliance Plan and Schedule section of the operating permit 227TVP01.

FACILITY-SPECIFIC REQUIREMENTS CARRIED FORWARD

State of Alaska regulations in 18 AAC 50.350(d)(1)(D) require that an operating permit include each facility-specific requirement established in a prior construction permit. Table C below lists the construction permit condition that established a requirement in Construction Permit No. 227CP01 and the new condition in Operating Permit No. 227TVP01 that carries the old requirement into the new permit.

Table B - Comparison of Permit No. 227CP01 Conditions to Operating Permit No. 227TVP01 Conditions[9]

Permit No. 227CP01 **Condition number**	**Description of Requirement**	**Permit No.** 227TVP01 **Condition Number**	**How condition was revised**
1	Source list	Table 1	Lists only sources w/specific MRR
2	Submit engine data	none	Required to be submitted before this permit is issued
5 – 5.1	Extend stacks	25 and 26	Not revised
6	Replace 6A with 6	27	Not revised
7	Notify if modify	28	Not revised
8	Report nonroad engines	29	Not revised
9	Fuel oil Sulfur limit	5.1	Not revised
10	Fuel gas Sulfur limit	5.4	Not revised
11& 18	Operating hour limits	14	Not revised
12 & 19	Fuel consumption limits	16	Not revised
17	NOx emission limits	13	Not revised
20	Calculate NOx emission	17	Not revised
21	Reporting	18	Similar requirement

[9] This table does not include all standard and general conditions

STATEMENT OF BASIS FOR THE PERMIT CONDITIONS

The state and federal regulations for each condition are cited in Operating Permit No. **227TVP01**.

Conditions 1 - 2, Emission Fees

Applicability: The regulations require all permits to include due dates for the payment of fees and any method the Permittee may use to re-compute assessable emissions.

Factual Basis: These standard conditions require the Permittee to pay fees in accordance with the Department's billing regulations. The billing regulations set the due dates for payment of fees based on the billing date.

The default assessable emissions are emissions of each air contaminant authorized by the permit (AS 46.14.250(h)(1)(A)). Air contaminant means any regulated air contaminant and any hazardous air contaminant. Therefore, assessable emissions under AS 46.14.250(h)(1)(A) means the **potential** to emit any air contaminant identified in the permit, including those not specifically limited by the permit.

The conditions also describe how the Permittee may calculate **actual** annual assessable emissions based on previous actual annual emissions. According to AS 46.14.250(h)(1)(B), assessable emissions are based on each air contaminant. Therefore, fees based on actual emissions must also be paid on any contaminant emitted whether or not the permit contains any limitation of that contaminant.

This standard condition specifies that, unless otherwise approved by the Department, calculations of assessable emission based on actual emissions use the most recent previous calendar year's emissions. Since each current year's assessable emission are based on the previous year, the Department will not give refunds or make additional billings at the end of the current year if the estimated emissions and current year actual emissions do not match. The Permittee will normally pay for actual emissions - just with a one-year time lag.

Projected actual emissions may differ from the previous year's actual emissions if there is a change at the facility, such as changes in equipment or an emission rate from existing equipment.

If the Permittee does not choose to annually calculate assessable emissions, emissions fees will be based on “potential to emit” (PTE).

The PTE set forth in the condition is based on liquid fuel with a sulfur content of 0.2 percent by weight. If the actual sulfur content of the fuel is greater than this assumption, the assessable emissions calculations provided by the Permittee should reflect the actual sulfur content.

Condition 3 and Section 6, Visible Emissions Standard

Applicability: This regulation applies to operation of all fuel-burning equipment in Alaska. Source ID(s) 1 - 7 are fuel-burning equipment.

Factual basis: Condition 3 requires the Permittee to comply with the federal and the state visible emission standards applicable to fuel-burning equipment and incinerators. The Permittee shall not cause or allow the equipment to violate these standards.

This condition has recently been adopted into regulation as a standard condition. MR&R requirements are listed in Section 6 of the permit.

Gas Fired:

Monitoring – The monitoring of gas fired sources for visible emissions is waived, i.e. no source testing will be required. The Department has found that natural gas fired equipment inherently has negligible PM emissions. However, the Department can request a source test for PM emissions from any smoking equipment.

Reporting – The Permittee must annually certify that only gaseous fuels are used in the equipment.

Liquid Fired:

Monitoring – The visible emissions may be observed by either Method-9 or the Smoke/No Smoke plans as detailed in Section 6. Corrective actions such as maintenance procedures and either more frequent or less frequent testing may be required depending on the results of the observations.

Recordkeeping - The Permittee is required to record the results of all visible emission observations and record any actions taken to reduce visible emissions.

Reporting - The Permittee is required to report: 1) emissions in excess of the federal and the state visible emissions standard and 2) deviations from permit conditions. The Permittee is required to include copies of the results of all visible emission observations with the facility operating report.

Insignificant Sources:

For these type of sources no visible emissions monitoring is required because these sources are insignificant sources based on actual emissions. As long as the sources do not exceed the limits they are insignificant by emissions as specified in 18 AAC 50.335(r) and no monitoring is required in accordance with recently issued Department Guidance AWQ 02-014. The Permittee must annually certify compliance under condition 57 with the opacity standard.

Condition 4 and Section 6, Particulate Matter (PM) Standard

Applicability: The PM standard applies to operation of all fuel burning equipment in Alaska. Source ID(s) 1 through 7 are fuel-burning equipment. The SIP standard for PM applies to all fuel-burning equipment because it is contained in the federally approved SIP dated October 1983.

Factual basis: Condition 4 requires the Permittee to comply with the state PM (also called grain loading) standard applicable to fuel-burning equipment. The Permittee shall not cause or allow fuel-burning equipment to violate this standard.

MR&R requirements are listed in Section 6 of the permit.

Gas Fired:

Monitoring – The monitoring of gas fired sources for particulate matter is waived, i.e. no source testing will be required. The Department has found that natural gas fired equipment inherently has negligible PM emissions. However, the Department can request a source test for PM emissions from any smoking equipment.

Reporting – The Permittee must annually certify that only gaseous fuels are used in the equipment.

Liquid Fired:

Monitoring – The Permittee is required to conduct PM source testing if threshold values for opacity are exceeded.

Recordkeeping - The Permittee is required to record the results of PM source tests.

Reporting - The Permittee is required to report: 1) incidents when emissions in excess of the opacity threshold values have been observed, 2) and results of PM source tests. The Permittee is required to include copies of the results of all visible emission observations with the facility operating report.

Condition 5, Sulfur Compound Emissions

Applicability: The sulfur emission standard applies to operation of all fuel-burning equipment in the State of Alaska. Source ID(s) 1 – 7 are fuel-burning equipment. The SIP standard for sulfur dioxide applies because it is contained in the federally approved SIP dated October 1983.

Factual basis: The condition requires the Permittee to comply with the sulfur emission standard applicable to fuel-burning equipment. The Permittee may not cause or allow the affected equipment to violate this standard.

Sulfur dioxide comes from the sulfur in the liquid, hydrocarbon fuel (e.g. diesel or No. 2 fuel oil). Fuel containing no more than 0.75 percent sulfur by weight will always comply with the emission standard. For fuels with a sulfur content higher than 0.75 percent, the condition requires the Permittee to use Section 16 to calculate the sulfur-dioxide concentration using the equations to show that the standard is not exceeded.

Fuel sulfur testing will verify compliance.

Fuel gas sulfur is measured as hydrogen sulfide (H_2S) concentration in ppm by volume (ppmv). Calculations[10] show that fuel gas containing no more than 4000 ppm H_2S will always comply with this emission standard. This is true for all fuel gases, even with no excess air.

Equations to calculate the exhaust gas SO_2 concentrations resulting from the combustion of fuel gas were not included in this permit. Fuel gas with an H_2S concentration of even 10 percent of 4000 ppm is currently not available in Alaska and is not projected to be available during the life of this permit.

[10] See ADEC Air Permits Web Site at http://www.state.ak.us/dec/dawq/aqm/newpermit.htm, under "Stoichiometric Mass Balance Calculations of Exhaust Gas SO2 Concentration."

Recordkeeping - For Diesel fuel the Permittee is required to record the fuel sulfur content or fuel grade of each shipment and all material balance calculations, and for fuel gas, the H_2S concentration of the fuel gas.

Reporting – The Permittee is required to report as "state" excess emissions whenever the fuel combusted causes sulfur compound emissions to exceed the standards in this condition. The Permittee is required to include the material balance calculations for fuel oil in the excess emissions report.

The Permittee is required to include copies of the records mentioned in the previous paragraph with the facility operating report.

Condition 6, NSPS Subpart Kb Requirements (Recordkeeping Only)

Applicability: NSPS Subpart Kb applies to sources that were built or modified after July 23, 1984. Source ID 8 was built on 1992. Source ID 8 has storage capacities of 20,000 gallons and stores a volatile organic liquid (VOLs). Since the tank has either

(1) storage capacities $\geq$ 40 m^3 (10,567gallons) but < 75 m^3 (20,0000 gallons);

(2) storage capacities $\geq$ 75 m^3 but < 151 m^3 (between 20,000 to 40,000 gallons) storing a VOL with a maximum true vapor pressure of < 15.0 kPa (2.2 psia); or

It is subject to **only** the recordkeeping requirements in Subpart Kb (**40 C.F.R. 60.116b(a) & (b)**).

Factual Basis: This condition incorporates Subpart Kb recordkeeping requirements. Because the condition is a permanent recordkeeping condition, no monitoring or reporting is required to ensure compliance with these federal requirements.

Conditions 7 - 12 (Section 6), Visible Emissions and PM Monitoring Plan

Applicability: Applies because these conditions detail the monitoring, recordkeeping, and reporting required in conditions 3 and 4.

Factual Basis: Each permit term and condition must include MR&R requirements showing verifiable compliance with each permit term and condition. The Permittee must establish by actual visual observations which can be supplemented by other means, such as a defined Facility Operation and Maintenance Program, that the facility is in continuous compliance with the State's emission standards for visible emissions and particulate matter. The correlation between particulate matter and visible emissions that is the basis for this monitoring procedure is discussed under conditions 3 and 4.

These conditions detail a stepwise process for monitoring compliance with the State's visible emissions and particulate matter standards for liquid and gas fired sources. Equipment types covered by these conditions are internal combustion engines, turbines, heaters, boilers, and flares. Initial monitoring frequency schedules are established along with subsequent reductions or increases in frequency depending on the results of the self-monitoring program.

Monitoring frequencies for hydrocarbon fuels, both liquid and gaseous, are detailed in these conditions. The monitoring intervals for gaseous fuels are less frequent than for liquid fuels in recognition of the reduced propensity of gaseous fuels to produce particulate matter as a result of combustion. This reduced level of monitoring for individual facilities in conjunction with the very large number of gas fired sources in Alaska should provide the

Department with sufficient data to evaluate the compliance history of these sources as a category.

Reasonable action thresholds are established in these conditions that require the Permittee to progressively address potential visible emission problems from sources either through maintenance programs and/or more rigorous tests that will quantify whether a specific emission standard has been exceeded.

Conditions13 - 18.4, Owner Requested Limits

Applicability: These are limits from Construction Permit No.227CP01 apply to the diesel engines source ID(s) 1 through 7.

Factual Basis: These conditions incorporate limits that were established to keep the maximum emissions from exceeding 250 TPY, thus avoiding the need for a PSD permit review. Monitoring and reporting is required to verify compliance. Note that Condition 16.3 is the same as Condition 12.2 in Construction permit 227CP01.

Conditions 19 - 20, Halon Prohibitions

Applicability: These prohibitions apply to all facilities that use halon for fire extinguishing and explosion inertion.

Factual basis: These conditions incorporate applicable 40 CFR 82 requirements. The Permittee may not cause or allow violations of these prohibitions.

Conditions 21- 24, Insignificant Sources

Applicability: These general emission standards apply to all industrial processes fuel-burning equipment, and incinerators regardless of size.

Factual basis: The conditions re-iterate the general standards and require compliance for insignificant sources. The Permittee may not cause or allow their equipment to violate these standards. Insignificant sources are not listed in the permit unless specific monitoring, recordkeeping and reporting are necessary to ensure compliance.

The Department finds that the insignificant sources at this facility do not need specific monitoring, recordkeeping and reporting to ensure compliance under these conditions.

Condition 21 requires certification that the sources did not exceed state emission standards during the previous year and did not emit any prohibited air pollution.

State air quality regulations adopted effective May 3, 2002 allow for an average six minute opacity observation. The existing regulation, limiting opacity to no more than 20% for more than 3 minutes in any one hour, is included because EPA Region X has not formally approved the changed opacity regulation as part of Alaska's State Implementation Plan (SIP).

Conditions 25- 30, Compliance Plan

Applicability: State regulations require that a Title V operation permit contains a compliance plan for permit conditions for which the facility is currently in violation.

Factual Basis: **The power plant** is a Prevention of Significant Deterioration (PSD) size Major Facility as defined in 18 AAC 50.300(c)(1) because it has the potential to emit more

than 250 TPY of a regulated air contaminant in an area classified as attainment or unclassifiable. The power plant has never gone through a PSD review.

However permittee has requested operating limits to keep the plants emissions to less than 250 TPY; thus avoiding the requirement for a PSD review.

Condition 31, Asbestos NESHAP

Applicability: The asbestos demolition and renovation requirements apply if the Permittee engages in asbestos demolition or renovation.

Factual Basis: The condition requires the Permittee to comply with asbestos demolition or renovation requirements in 40 C.F.R. 61, Subpart M. Because these regulations include adequate monitoring and reporting requirements and because the Permittee is not currently engaged in such activity, simply citing the regulatory requirements is sufficient to ensure compliance with these federal regulations.

Condition 32, Refrigerant Recycling and Disposal

Applicability: Applies if the Permittee engages in the recycling or disposal of certain refrigerants.

Factual Basis: The condition requires the Permittee to comply with the standards for recycling and emission reduction of refrigerants set forth in 40 C.F.R. 82, Subpart F, that will apply if the Permittee uses certain refrigerants. Because these regulations include adequate monitoring and reporting requirements and because the Permittee is not currently engaged in such activity, simply citing the regulatory requirements is sufficient to ensure compliance with this federal regulation.

Condition 33, Good Air Pollution Control Practice

Applicability: Applies to all sources, **except** NSPS regulated sources, i.e. Source ID(s) 1 – 7.

Factual basis: The condition requires the Permittee to comply with good air pollution control practices for all sources.

Maintaining and operating equipment in good working order is fundamental to preventing unnecessary or excess emissions. Standard conditions for monitoring compliance with emission standards are based on the assumption that good maintenance is performed. Without appropriate maintenance, equipment can deteriorate more quickly than with appropriate maintenance. If appropriate maintenance is not applied to the equipment, the Department may have to apply more frequent periodic monitoring requirements (unless the monitoring is already continuous) to ensure that the monitoring results are representative of actual emissions.

The Permittee is required to keep maintenance records to show that proper maintenance procedures were followed, and to make the records available to the Department. The Department may use these records as a trigger for requesting source testing if the records show that maintenance has been deferred.

Condition 34, Dilution

Applicability: This state regulation applies to the Permittee because the Permittee is subject to emission standards in 18 AAC 50.

Factual Basis: The condition prohibits the Permittee from diluting emissions as a means of compliance with any standard in 18 AAC 50.

Condition 35, Reasonable Precautions to Prevent Fugitive Dust

Applicability: Bulk material handling requirements apply to the Permittee because the Permittee will engage in bulk material handling, transporting, or storing; or will engage in industrial activity at the facility. The facilities gravel pad is a fugitive dust source.

Factual Basis: The underlying regulation, 18 AAC 50.045(d), requires the Permittee to take reasonable action to prevent particulate matter (PM) from being emitted into the ambient air.

Condition 36, Stack Injection

Applicability: Stack injection requirements apply to the facility because the facility contains a stack or source constructed or modified after November 1, 1982.

Factual Basis: The condition prohibits the Permittee from releasing materials other than process emissions, products of combustion, or materials introduced to control pollutant emissions from a stack (i.e. disposing of material by injecting it into a stack). No specific monitoring for this condition is practical. Compliance is ensured by inspections, because the source or stack would need to be modified to accommodate stack injection.

Condition 37, Air Pollution Prohibited

Applicability: Air Pollution Prohibited requirements apply to the facility because the facility will have emissions.

Factual Basis: The condition prohibits the Permittee from causing any emission which is injurious to human health or welfare, animal or plant life, or property, or which would unreasonably interfere with the enjoyment of life or property. While the other permit conditions and emissions limitation should ensure compliance with this condition, unforeseen emission impacts can cause violations of this standard. These violations would go undetected except for complaints from affected persons. Therefore, to monitor compliance, the Permittee must monitor and respond to complaints.

The Permittee is required to report any complaints and injurious emissions. The Permittee must keep records of the date, time, and nature of all complaints received and summary of the investigation and corrective actions undertaken for these complaints and to submit copies of these records upon request of the Department.

The Department will determine whether the necessary actions were taken. No corrective actions are necessary if the complaint is frivolous or there is not a violation of 18 AAC 50.110, however this condition is intended to prevent the Permittee from prejudging that complaints are invalid.

Condition 38, Technology-Based Emission Standard

Applicability: Technology Based Emission Standard requirements apply to the facility because the facility contains equipment subject to a technology-based emission standard, such as BACT, MACT, LAER, NSPS or other "technologically feasible" determinations.

Factual Basis: The Permittee is required to take reasonable steps to minimize emissions if certain activity causes an exceedance of any technology-based emission standard in this permit. The conditions of this permit list applicable technology-based emission standards and require excess emission reporting for each standard in accordance with condition 54. Excess emission reporting under condition 54 requires information on the steps taken to minimize emissions. Monitoring of compliance for this condition consists of the report required under condition 54.

Condition 39, Permit Renewal

Applicability: Applies if the Permittee intends to renew the permit.

Factual Basis: The Permittee is required to submit an application for permit renewal by the specific dates applicable to TDX North Slope Generating, Inc. as listed in this condition. Monitoring, recordkeeping, and reporting for this condition consist of the application submittal.

Condition 40, Requested Source Tests

Applicability: Applies because this is a standard condition to be included in all permits.

Factual Basis: The Permittee is required to conduct source tests as requested by the Department. Monitoring consists of conducting the requested source test.

Conditions 41 - 43, Operating Conditions, Reference Test Methods, Excess Air Requirements

Applicability: Apply because the Permittee is required to conduct source tests by this permit.

Factual Basis: The Permittee is required to conduct source test as set out in conditions 41 through 43. These conditions supplement the specific monitoring requirements stated elsewhere in this permit. Compliance monitoring with conditions 41 through 43 consist of the test reports required by condition 48.

Condition 44, Test Exemption

Applicability: Applies when the source exhaust is observed for visible emissions.

Factual Basis: As provided in 18 AAC 50.345(a), 5/03/02, the requirements for test plans, notifications and reports do not apply to visible emissions observations by smoke readers, except in connection with required particulate matter testing.

Conditions 45 - 48, Test Deadline Extension, Test Plans, Notifications and Reports

Applicability: Apply because the Permittee is required to conduct source test by this permit.

Factual Basis: Standard conditions 18 AAC 50.345(l) - (o) are incorporated through these conditions. These standard conditions supplement specific monitoring requirements stated elsewhere in this permit. The source test itself monitors compliance with this condition.

Condition 49, Particulate Matter (PM) Calculations

Applicability: Applies when the Permittee tests for compliance with the PM standard.

Factual Basis: The condition incorporates a regulatory requirement for PM source tests. This condition supplements specific monitoring requirements stated elsewhere in this permit.

Condition 50, Source Identification

This is a requirement carried over from the construction permit. Applies because it is required under 18 AAC 50.350(d)(1)(D).

Condition 50, Certification

Applicability: This is a standard condition to be included in all permits. Applies because every permit requires the Permittee to submit reports.

Factual Basis: This condition requires the Permittee to certify all reports submitted to the Department. To ease the certification burden on the Permittee, the condition allows the excess emission reports to be **certified** with the facility report, even though it must still be **submitted** more frequently than the facility operating report. This condition supplements the reporting requirements of this permit.

Condition 51, Submittals

Applicability: Applies because the Permittee is required to send reports to the Department.

Factual Basis: This condition requires the Permittee to send submittals to the address specified in this condition. Receipt of the submittal at the correct Department office is sufficient monitoring for this condition. This condition supplements the reporting requirements of this permit.

Condition 52, Information Requests

Applicability: Applies to all Permittees, and incorporates a standard condition.

Factual Basis: This condition incorporates a standard condition in regulation, which requires the Permittee to submit information requested by the Department. Monitoring consists of receipt of the requested information.

Condition 53, Recordkeeping Requirements

Applicability: Applies because the Permittee is required by the permit to keep records.

Factual Basis: The condition restates the regulatory requirements for recordkeeping, and supplements the recordkeeping defined for specific conditions in the permit. The records being kept provide an evidence of compliance with this requirement.

Condition 54, Excess Emission and Permit Deviation Reports

Applicability: Applies when the emissions or operations deviate from the requirements of the permit.

Factual Basis: This condition satisfies two state regulations related to excess emissions - the technology-based emission standard regulation and the excess emission regulation. Although there are some differences between the regulations, the condition satisfies the requirements of each regulation.

The reports themselves and the other monitoring records required under this permit provide monitoring of whether the Permittee has complied with the condition.

Condition 55, NSPS and NESHAP Reports

Applicability: Applies to facilities subject to NSPS and NESHAP federal regulations.

Factual Basis: The condition supplements the specific reporting requirements in 40 C.F.R. 60 and 40 C.F.R. 61. The reports themselves provide monitoring for compliance with this condition.

Condition 56, Operating Reports

Applicability: Applies to all permits.

Factual Basis: The condition restates the requirements for reports listed in regulation. The condition supplements the specific reporting requirements elsewhere in the permit. The reports themselves provide monitoring for compliance with this condition.

Condition 57, Annual Compliance Certification

Applicability: Applies to all Permittees.

Factual Basis: This condition specifies the periodic compliance certification requirements, and specifies a due date for the annual compliance certification. The reports themselves provide monitoring for compliance with this condition.

Conditions 58 - 64, Standard Conditions

Applicability: Applies because these are standard conditions to be included in all permits.

Factual Basis: These are standard conditions required for all operating permits.

Appendix A

Section 2 of the Technical Analysis Report for Construction Permit 227CP01.

2. Project Description and Equipment Inventory

TDX is requesting an operation limit of the proposed diesel generators Source IDs 1, 4, 5 and 7 for burning up to 400,000 gallons of diesel fuel per 12-month rolling period. TDX is requesting the restriction to limit the potential emissions of nitrogen oxides (NO_X) and carbon monoxide (CO) to less than the PSD applicability threshold of 250 tons per year each.

In addition, the plant includes gas-fired reciprocating engines. Local fuel suppliers supply the fuel. The gas fuel is directly delivered through a dedicated gas pipeline to the facility. The diesel fuel is stored in aboveground fuel storage tanks at the facility. TDX intends to operate the gas engine generators as their primary source of power. The proposed (new) gas engine, Source ID 6 will drive the main electric generator. The operating plan calls for the diesel-fired engines to be operated as backup units during periods when the fuel gas-fired engines are off-line for routine and non-routine maintenance.

Table 2.0 Potential Emissions Inventory Existing

Deadhorse Power Plant

Source ID	Source Name	Load / Hrs	Fuel Type	Emissions TPY		Installed
				NO_x	CO	
1	**Diesel back up generator #1**	**100 % 8760 Hrs**	**Diesel oil**	**161.8**	**13.5**	**1989**
2	**Gas Peaking Generator #2**	**100 % 8760 Hrs**	**Nat'l Gas**	**37.4**	**14.8**	**1992**
3	**Gas Peaking Generator #3**	**100 % 8760 Hrs**	**Nat'l Gas**	**37.4**	**14.8**	**1992**
4	**Diesel back up generator #4**	**100 % 8760 Hrs**	**Diesel oil**	**161.8**	**13.5**	**1989**
5	**Diesel Back up generator #6**	**100 % 8760 Hrs**	**Diesel oil**	**551.4**	**12.7**	**1982**
6A	**Diesel Main Generator #11**	**100 % 8760 Hrs**	**Diesel oil**	**808.4**	**24.4**	**1991**
7	**Diesel back up Generator # 12**	**100 % 8760 Hrs**	**Diesel oil**	**22.6**	**3.9**	**1970**
		Total emissions TPY		**1,781**	**98**	

Limitations to avoid PSD

Table 2.0 shows the current Potential Emission Inventory of the Deadhorse Power Plant. The emission factors are based on the equipment vendor data. The emission values as presented in the table are based on 100% load, operating continuous for 12 months (8760 hours). TDX proposes to replace the existing diesel generator Source ID 6A for a new gas fired generator Source ID 6. Further, TDX proposes to limit the total fuel consumption of the diesel engines (Source IDs 1, 4, 5, and 7) up to 400,000 gallons per twelve-month rolling period.

If the 400,000 gallons is burned in the unit with the greatest fuel specific emission factors, Source ID 1 and 4, operating at 50% load of the maximum load, the total potential NO_X emissions will be 139 TPY and the potential CO emissions will be 10.5 TPY. The emission values calculated under this scenario were based on the specific emission factors and fuel consumption rates provided for that load by the engine vendor. Table 3.0 shows the proposed allowable emissions of the Deadhorse Power Plant as modified, with a diesel fuel limitation of 400,000 gallons per year. The worst case scenario, as mentioned earlier, is based on burning all the diesel fuel at Source IDs 1 and 4, running at 50% load. This scenario represents the maximum NO_X and CO emissions for the Diesel Group (Source IDs 1, 4, 5 and 7). The sulfur dioxide emissions are based on a gas fuel with no more than 100 part per million by volume (ppmv) total gas sulfur content and diesel fuel with no more than 0.2% sulfur by weight.

The facility has no dedicated heating system (boilers, heaters etc). The cooling water heat from the engines is used to heat the building.

Table 3.0 Proposed Allowable Emissions

Deadhorse Power Plant

Source ID	Source Name	Load / Hrs[11]	Fuel Type	Emissions TPY		Installed
				NO_X	CO	
1	Diesel back up generator #1	100 % 8760 Hrs	Diesel	See D-group	See D-group	1989
2	Gas Peaking Generator #2	100 % 8760 Hrs	Gas	37.4	14.8	1992
3	Gas Peaking Generator #3	100 % 8760 Hrs	Gas	37.4	14.8	1992
4	Diesel back up generator #4	100 % 8760 Hrs	Diesel	See D-group	See D-group	1989
5	Diesel Back up generator #6	100 % 8760 Hrs	Diesel	See D-group	See D-group	1982
6[12]	Gas Main Generator #11	100 % 8760 Hrs	Gas	32.5	116.1	Future
7	Diesel back up Generator # 12	100 % 8760 Hrs	Diesel	See D-group	See D-group	1970
1, 4, 5 and 7[13]	D-Group [Diesel Group]	See Note	Diesel	139.0	8.5	

[11] The gas engine emission estimates are based on 8760 operating hours per year.
[12] Replacement Source ID 6 CAT G 3616 gas engine.

		Total emissions TPY	**246.3**	**154.2**	

TDX requests the following limitations through 18 AAC 50.305(a)(4) Construction Permit Provisions Requested by the owner or operator:

- Limit the facility-wide diesel fuel consumption to 400,000 gallons per 12 months rolling period.
- Limit the Sulfur % of the diesel fuel to no more than 0.2% by weight.
- Limit the total sulfur (S) content for the fuel gas used at the facility to no more than 100 ppmv.
- Burn gas fuel in the Source IDs 3, 4, and 6.

To monitor and record the amount of diesel fuel use per twelve-month rolling period TDX shall install certified fuel meters for each diesel-fired engine. The department included in the Air Quality Permit conditions to install and maintain the fuel meters. Monitoring and recording conditions for the diesel fuel grade (sulfur % by weight) and for gas fuel sulfur content are listed in the Air Quality Construction Permit. These conditions are included in Section 5 of the preliminary permit as necessary to protect ambient air quality.

Table 4.0

Overview of potential and allowable emissions
Deadhorse Power Plant

Emissions Category	NO_X TPY	CO TPY	PM_{10} TPY	VOC TPY	SO_2 TPY
Existing Facility Potential Emissions[1]	1781	98	28	55	82
Proposed Facility Allowable Emissions.[2]	246	154	17	86	9
PSD Threshold	250	250	250	250	250
PSD Applicable	No	No	No	No	No

Notes: 1. The existing facility has no emitting or operating restriction to limit potential emissions.
2. Allowable emissions are based on the total diesel fuel consumption of 400,000 gallons per twelve-month period. The use of fuels with limited Sulfur % by weight.

Table 4.0 shows an overview of the existing facility's potential emissions based on 8760 hours of operation, compared with the proposed facility's allowable emissions, as subject to operation and emission limits and the Prevention of Significant Deterioration thresholds as listed in 18 AAC 50.300(h)(3).

The allowable emissions showed in Table 4.0 are based on:

[13] Note: For the diesel sources, Source IDs 1 and 4 represent the (worst case scenario) NO_X and CO, based on using 400,000 gallons at 50% load. The NO_X and CO emissions are based on vendor emissions and fuel consumption data and a load of 50% of the maximum load.

- 8760 hours of operation (per twelve months rolling period) for the gas engines (Source ID 2, 4 and 6);
- replacement of the existing Source ID 6A with the new gas engine, Source ID 6; and
- diesel fuel limitation of 400,000 gallons per twelve months rolling period.

Source ID 6 replacement and diesel engine operational limits contribute greatly in the overall NO_X emission reduction strategy of the facility.

The department included within the preliminary Construction Permit conditions that limit the operating time of the diesel engine sources. Provisions are made in the construction permit to install a fuel consumption and hour meter for each engine, to record and to report fuel consumption and operating hours, as set out in Sections 5 and 8 of the Construction Permit.

The department considered whether TDX would need to install continuous emission monitoring systems (CEMS) on the exhaust stacks of the seven fuel-burning equipment units. In past construction permit decisions, the department has specified continuous emission monitoring for sources that approach the applicable emission limitation designed to avoid PSD classification. Since the department has:

- Imposed both an emission limit and operational restrictions on the equipment;
- Imposed continuous monitoring for compliance with the operational restriction; and
- Imposed site-specific emission source testing to verify vendor emission estimates if emissions exceed ninety percent of the PSD threshold,

And the applicant has proposed to rely on clean burning natural gas units for primary power production, the department has proposed not to require CEMS in this construction permit decision. The department may reconsider the proposal when issuing or renewing the operating permit based on the facility's compliance records at the time of the operating permit decision.